

Application S.N. 10/595,289
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AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claims 1-7 (canceled).

Claim 8 (previously presented): A balanced-type surface acoustic wave filter with a balanced-to-unbalanced conversion function including an unbalanced signal terminal and first and second balanced signal terminals, the balanced-type surface acoustic filter comprising:

a piezoelectric substrate;

a first longitudinally coupled resonator-type surface acoustic wave filter portion having first to third IDTs disposed along a propagation direction of a surface wave on the piezoelectric substrate, a middle second IDT of the first to third IDTs being connected to the unbalanced signal terminal; and

a second longitudinally coupled resonator-type surface acoustic wave filter portion having fourth to sixth IDTs disposed along the propagation direction of the surface wave on the piezoelectric substrate, the fourth IDT connected to the first IDT, and the fifth IDT connected to the first and second balanced signal terminals; wherein

an electric signal passing through a signal line connecting the first IDT and the fourth IDT is about 180 degrees different in phase from an electric signal passing through a signal line connecting the third IDT and the sixth IDT; and

in the first longitudinally coupled resonator-type surface acoustic wave filter portion, in at least one of the portion where the first and second IDTs are adjacent to each other and the portion where the second and third IDTs are adjacent to each other, in at least one of the adjacent IDTs, weighting is provided on a plurality of electrode fingers including an outermost electrode finger which is the closest to the adjacent IDT.

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Claim 9 (previously presented): The balanced-type surface acoustic wave filter as claimed in claim 8, wherein, out of the at least one of the portion where the first and second IDTs are adjacent to each other and the portion where the second and third IDTs are adjacent to each other, the weighting is provided in a portion in which the adjacent outermost electrode fingers have the same polarity.

Claim 10 (previously presented): The balanced-type surface acoustic wave filter as claimed in claim 8, wherein the weighting is provided such that the length of a plurality of electrode fingers including the outermost electrode finger is different from the other electrode fingers.

Claim 11 (previously presented): The balanced-type surface acoustic wave filter as claimed in claim 10, wherein the weighting is a cross-width weighting.

Claim 12 (previously presented): The balanced-type surface acoustic wave filter as claimed in claim 10, wherein the weighting is a series weighting.

Claim 13 (previously presented): The balanced-type surface acoustic wave filter as claimed in claim 8, wherein the electrode fingers in which the weighting is performed are disposed in a narrow-pitched electrode-finger portion.

Claim 14 (previously presented): The balanced-type surface acoustic wave filter as claimed in claim 8, wherein, in the second longitudinally coupled resonator-type surface acoustic wave filter portion, the number of electrode fingers of the fifth IDT located in the middle in the propagation direction of the surface wave is an even number.

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Claim 15 (previously presented): The balanced-type surface acoustic wave filter as claimed in claim 8, wherein one terminal of the fifth IDT in the middle of the second longitudinal resonator-type surface acoustic wave filter portion is connected to a first balanced terminal, and the other terminal is connected to a second balanced signal terminal.

Claim 16 (currently amended): The balanced-type surface acoustic wave filter as claimed in claim 8, wherein the first longitudinally coupled resonator-type surface acoustic filter-portions portion includes reflectors disposed at both sides in the surface wave propagation direction of an area in which the first to third IDTs are disposed.

Claim 17 (currently amended): The balanced-type surface acoustic wave filter as claimed in claim 8, wherein the second longitudinally coupled resonator-type surface acoustic filter-portions portion includes reflectors disposed at both sides in the surface wave propagation direction of an area in which the fourth to sixth IDTs are disposed.

Claim 18 (previously presented): The balanced-type surface acoustic wave filter as claimed in claim 8, wherein the first and second longitudinally coupled resonator-type surface acoustic filter portions are cascade connected to one another.

Claim 19 (previously presented): The balanced-type surface acoustic wave filter as claimed in claim 8, wherein the piezoelectric substrate is a 40 ± 5 degree, Y-cut, X-propagation LiTaO₃ substrate.